

## Chapter 2. Definitions

November 2, 2000

When the following terms are used in the Standards and Recommended Practices for aeronautical information services, they have the following meanings:

**Accuracy.** A degree of conformance between the estimated or measured value and the true value.

*Note.*--For measured positional data the accuracy is normally expressed in terms of a distance from a stated position within which there is a defined confidence of the true position failing.

**Aeronautical data.** A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing.

**Aeronautical information.** Information resulting from the assembly, analysis and formatting of aeronautical data.

**Aeronautical Information Circular (AIC).** A notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters.

**Aeronautical Information Publication (AIP).** A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

**Aeronautical information service.** A service established within the defined area of coverage responsible for the provision of aeronautical information/data necessary for the safety, regularity and efficiency of air navigation.

**AIP Amendment.** Permanent changes to the information contained in the AIP

**AIP Supplement.** Temporary changes to the information contained in the AIP which are published by means of special pages.

**AIRAC.** An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification based on common effective dates, of circumstances that necessitate significant changes in operating practices.

**Air Defence Identification Zone (ADIZ).** Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services (ATS).

**AIS product.** Aeronautical information provided in the form of the elements of the integrated aeronautical information package (except NOTAM and PIB), including aeronautical charts, or in the form of suitable electronic media.

**ASHTAM.** A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations.

**Assemble.** A process of merging aeronautical information from multiple sources into a data base and establishing a baseline for subsequent processing.

*Note.*--The assemble phase includes checking the data and ensuring that detected errors and omissions are rectified.

**Cyclic redundancy check (CRC).** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.

**Danger area.** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.

**Data base.** One or more files of data so structured that appropriate applications may draw from the files and update them.

*Note.*--This primarily refers to data stored electronically and accessed by computer rather than in files of physical records.

**Data quality.** A degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution and integrity.

**Direct transit arrangements.** Special arrangements approved by the public authorities concerned by which traffic which is pausing briefly in its passage through the Contracting State may remain under their direct control.

**Ellipsoid height (Geodetic height).** The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.

**Geodesic distance.** The shortest distance between any two points on a mathematically defined ellipsoidal surface.

**Geodetic datum.** A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.

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**Geoid.** The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.

*Note.*--The geoid is irregular in shape because of local gravitational disturbances (wind tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point.

**Geoid undulation.** The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.

*Note.*--In respect to the World Geodetic System--1984 (WGS-84) defined ellipsoid, the difference between the WGS-84 ellipsoidal height and orthometric height represents WGS-84 geoid undulation.

**Heliport.** An aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.

**Human Factors principles.** Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.

**Integrated Aeronautical Information Package.** A package which consists of the following elements:

- AIR including amendment service;
- supplements to the AIP;
- NOTAM and pre-flight information bulletins (PIB);
- AIC;
- checklists and summaries.

**Integrity (aeronautical data).** A degree of assurance that an aeronautical data and its value has not been lost nor altered since the data origination or authorized amendment.

**International airport.** Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out.

**International NOTAM office.** An office designated by a State for the exchange of NOTAM internationally.

**Manoeuvring area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.

**Movement area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the aprons(s).

**NOTAM.** A notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations.

**Orthometric height.** Height of a point related to the geoid, generally presented as an MSL elevation.

**Position (geographical).** Set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the Earth.

**Precision.** The smallest difference that can be reliably distinguished by a measurement process.

*Note.*--In reference to geodetic surveys, precision is a degree of refinement in performance of an operation or a degree of perfection in the instruments and methods used when making measurements.

**Pre-flight information bulletin (PIB).** A presentation of current NOTAM information of operational significance, prepared prior to flight.

**Prohibited area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.

**Quality.** Totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs (ISO 8402\*).

*Note.*--Entity is an item which can be individually described and considered (ISO 8402\*)

**Quality assurance.** All the planned and systematic activities implemented within the quality system, and demonstrated as needed, to provide adequate confidence that an entity will fulfil requirements for quality (ISO 8402\*).

**Quality control.** The operational techniques and activities that are used to fulfil requirements for quality (ISO 8402\*).

**Quality management.** All activities of the overall management function that determine the quality policy, objectives and responsibilities, and implementing them by means such as quality planning, quality control, quality assurance and quality improvement within the quality system (ISO 8402\*).

**Quality system.** The organizational structure, procedures, processes and resources needed to implement quality

management (ISO 8402\*).

\*ISO Standard 8402 -- *Quality Management and Quality Assurance--Vocabulary*, Second Edition.

**Requirements for quality.** Expression of the needs or their translation into a set of quantitatively or qualitatively stated requirements for the characteristics of an entity to enable its realization and examination (ISO 8402\*).

**Resolution.** A number of units or digits to which a measured or calculated value is expressed and used.

**Restricted area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions.

**Route stage.** A route or portion of a route flown without an intermediate landing.

**SNOWTAM.** A special series NOTAM notifying the presence or removal of hazardous conditions due to snow, ice, slush or standing water associated with snow, slush and ice on the movement area, by means of a specific format.

**Station declination.** An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.

**Traceability.** Ability to trace the history, application or location of an entity by means of recorded identifications (ISO 8402\*).

**Validation.** Confirmation by examination and provision of objective evidence that the particular requirements for a specific intended use are fulfilled (ISO 8402\*).

**Verification.** Confirmation by examination and provision of objective evidence that specified requirements have been fulfilled (ISO 8402\*).

**Note.**--Objective evidence is information which can be proved true, based on facts obtained through observation, measurement, test or other means (ISO 8402\*).

\*ISO Standard 8402 -- *Quality Management and Quality Assurance--Vocabulary*, Second Edition.

e) the current aeroplane status of compliance with the maintenance programme; and

f) the detailed maintenance records to show that all requirements for signing of a maintenance release have been met.

8.4.2 The records in 8.4.1 a) to e) shall be kept for a minimum period of 90 days after the unit to which they refer has been permanently withdrawn from service, and the records in 8.4.1 f) for a minimum period of one year after the signing of the maintenance release.

8.4.3 In the event of a temporary change of operator, the records shall be made available to the new operator. In the event of any permanent change of operator, the records shall be transferred to the new operator.

## 8.5 Continuing airworthiness information

8.5.1 The operator of an aeroplane over 5 700 kg maximum certificated take-off mass shall monitor and assess maintenance and operational experience with respect to continuing airworthiness and provide the information as prescribed by the State of Registry and report through the system specified in Annex 8, Part II, 4.2.5 and 4.2.8.

8.5.2 The operator of an aeroplane over 5 700 kg maximum certificated take-off mass shall obtain and assess continuing airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting actions considered necessary in accordance with a procedure acceptable to the State of Registry.

*Note. -- Guidance on interpretation of "the organization responsible for the type design" is contained in the Continuing Airworthiness Manual (Doc 9642).*

## 8.6 Modifications and repairs

All modifications and repairs shall comply with airworthiness requirements acceptable to the State of Registry. Procedures shall be established to ensure that the substantiating data supporting compliance with the airworthiness requirements are retained.

## 8.7 Approved maintenance organization

### 8.7.1 Issue of approval

8.7.1.1 The issue of a maintenance organization approval by a State shall be dependent upon the applicant demonstrating compliance with the requirements of 8.7 for such organizations.

8.7.1.2 The approval document shall contain at least the following:

- a) organization's name and location;
- b) date of issue and period of validity;
- c) terms of approval.

8.7.1.3 The continued validity of the approval shall depend upon the organization remaining in compliance with the requirements of 8.7 for an approved maintenance organization.

### 8.7.2 Maintenance organization's procedures manual

8.7.2.1 The maintenance organization shall provide for the use and guidance of maintenance personnel concerned a procedures manual containing the information specified in 11.4.

8.7.2.2 The maintenance organization shall ensure that the procedures manual is amended as necessary to keep the information contained therein up to date.

8.7.2.3 Copies of all amendments to the procedures manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

### 8.7.3 Maintenance procedures and quality assurance system

8.7.3.1 The maintenance organization shall establish procedures, acceptable to the State granting the approval, which ensure good maintenance practices and compliance with all relevant requirements of this chapter.

8.7.3.2 The maintenance organization shall ensure compliance with 8.7.3.1 by either establishing an independent quality assurance system to monitor compliance with and adequacy of the procedures, or by providing a system of inspection to ensure that all maintenance is properly performed.

### 8.7.4 Facilities

8.7.4.1 The facilities and working environment shall be appropriate for the task to be performed.

8.7.4.2 The maintenance organization shall have the necessary technical data, equipment, tools and material to perform the work for which it is approved.

8.7.4.3 Storage facilities shall be provided for parts, equipment, tools and material. Storage conditions shall be such as to provide security and prevent deterioration of and damage to stored items.

### 8.7.5 Personnel

## **Chapter 8. Aeroplane Maintenance**

**November 5, 1998**

*Note 1. -- For the purpose of this chapter "aeroplane" includes: powerplants, propellers, components, accessories, instruments, equipment and apparatus including emergency equipment.*

*Note 2. -- Reference is made throughout this chapter to the requirements of the State of Registry. When the State of the Operator is not the same as the State of Registry, it may be necessary to consider any additional requirements of the State of the Operator.*

*Note 3. -- Guidance on continuing airworthiness requirements is contained in the Continuing Airworthiness Manual (Doc 9642).*

### **8.1 Operator's maintenance responsibilities**

8.1.1 Operators shall ensure that, in accordance with procedures acceptable to the State of Registry:

- a) each aeroplane they operate is maintained in an airworthy condition;
- b) the operational and emergency equipment necessary for an intended flight is serviceable;
- c) the Certificate of Airworthiness of each aeroplane they operate remains valid.

8.1.2 An operator shall not operate an aeroplane unless it is maintained and released to service by an organization approved in accordance with 8.7, or under an equivalent system, either of which shall be acceptable to the State of Registry.

8.1.3 When the State of Registry accepts an equivalent system, the person signing the maintenance release shall be licensed in accordance with Annex 1.

8.1.4 An operator shall employ a person or group of persons to ensure that all maintenance is carried out in accordance with the maintenance control manual.

8.1.5 The operator shall ensure that the maintenance of its aeroplanes is performed in accordance with the maintenance programme.

### **8.2 Operator's maintenance control manual**

8.2.1 The operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance control manual, acceptable to the State of Registry, in accordance with the requirements of 11.2.

8.2.2 The operator shall ensure that the maintenance control manual is amended as necessary to keep the information contained therein up to date.

8.2.3 Copies of all amendments to the operator's maintenance control manual shall be furnished promptly to all organizations or persons to whom the manual has been issued.

8.2.4 The operator shall provide the State of the Operator and the State of Registry with a copy of the operator's maintenance control manual, together with all amendments and/or revisions to it and shall incorporate in it such mandatory material as the State of the Operator or the State of Registry may require.

### **8.3 Maintenance programme**

8.3.1 The operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme, approved by the State of Registry, containing the information required by 11.3. The design and application of the operator's maintenance programme shall observe Human Factors principles.

*Note. -- Guidance material on the application of Human Factors principles can be found in Circular 216 (Human Factors Digest No. 1 -- Fundamental Human Factors Concepts), Circular 238 (Human Factors Digest No. 6 -- Ergonomics) and Circular 253 (Human Factors Digest No. 12 -- Human Factors in Aircraft Maintenance and Inspection).*

8.3.2 Copies of all amendments to the maintenance programme shall be furnished promptly to all organizations or persons to whom the maintenance programme has been issued.

### **8.4 Maintenance records**

8.4.1 An operator shall ensure that the following records are kept for the periods mentioned in 8.4.2:

- a) the total time in service (hours, calendar time and cycles, as appropriate) of the aeroplane and all life limited components;
- b) the current status of compliance with all mandatory continuing airworthiness information;
- c) appropriate details of modifications and repairs to the aeroplane and its major components;
- d) the time in service (hours, calendar time and cycles, as appropriate) since last overhaul of the aeroplane or its components subject to a mandatory overhaul life;

8.7.5.1 The maintenance organization shall nominate a person or group of persons whose responsibilities include ensuring that the maintenance organization is in compliance with 8.7 the requirements for an approved maintenance organization.

8.7.5.2 The maintenance organization shall employ the necessary personnel to plan, perform, supervise, inspect and release the work to be performed.

8.7.5.3 The competence of maintenance personnel shall be established in accordance with a procedure and to a level acceptable to the State granting the approval. The person signing a maintenance release shall be qualified in accordance with Annex 1.

8.7.5.4 The maintenance organization shall ensure that all maintenance personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The training programme established by the maintenance organization shall include training in knowledge and skills related to human performance, including co-ordination with other maintenance personnel and flight crew.

*Note. -- Guidance material to design training programmes to develop knowledge and skills in human performance can be found in Circular 216 (Human Factors Digest No. 1 -- Fundamental Human Factors Concepts); Circular 217 (Human Factors Digest No. 2 -- Flight Crew Training: Cockpit Resource Management (CRM) and Line-Oriented Flight Training (LOFT); Circular 217 (Human Factors Digest No. 3 -- Training of Operational Personnel in Human Factors); and Circular 253 (Human Factors Digest No. 12 -- Human Factors in Aircraft Maintenance and Inspection).*

#### 8.7.6 Records

8.7.6.1 The maintenance organization shall retain detailed maintenance records to show that all requirements for the signing of a maintenance release have been met.

8.7.6.2 The records required by 8.7.6.1 shall be kept for a minimum period of one year after the signing of the maintenance release.

#### 8.7.7 Maintenance release

8.7.7.1 A maintenance release shall be completed and signed to certify that the maintenance work performed has been completed satisfactorily and in accordance with the procedures described in the maintenance organization's procedures manual.

8.7.7.2 A maintenance release shall contain a certification including:

- a) basic details of the maintenance carried out;
- b) date such maintenance was completed;
- c) when applicable, the identity of the approved maintenance organization; and
- d) the identity of the person or persons signing the release.